

2000

Environmental Cleanup Award

Submission for Installation Restoration



Puget Sound Naval Shipyard

The background of the page is a faded photograph of a harbor scene. On the left, a large lattice boom crane is visible. In the center, a ship is docked at a pier. On the right, a tall, dark vertical structure, possibly a chimney or part of a ship's superstructure, rises. The water is calm, reflecting the sky and the structures. The overall tone is light and slightly hazy.

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Captain Gregory R. Bryant
Commaner, Puget Sound Naval Shipyard

I am pleased to present Puget Sound Naval Shipyard's Installation Restoration Environmental Cleanup Award nomination for 2000. I fully support and encourage all aspects of this program.

The policy of Puget Sound Naval Shipyard is to pursue a standard of environmental excellence which will protect and improve the quality of our environment while we conduct our Shipyard's operations. We have made significant accomplishments in our installation restoration program. This award package summarizes those accomplishments and the innovations which have contributed to our success in providing a cleaner environment for our community.

As the second largest industrial activity in the state, Puget Sound Naval Shipyard is committed to being a leader in installation restoration.

GR Bryant

Introduction

Puget Sound Naval Shipyard's mission is to meet the emergent needs of the Navy and execute the full range of ship maintenance services. This includes planning, engineering and maintenance, repairs, and modernization. It also includes recycling of Navy surface ships and submarines.

The Shipyard was established in 1891 on 180 acres. Located adjacent to the City of Bremerton and on the shores of Sinclair Inlet, the Shipyard is the Pacific

Northwest's largest naval shore facility and one of Washington State's largest industrial installations. With a combined military and civilian population of approximately 7,800 people and a combined plant value over \$1.4 billion, it is the largest shipyard on the West Coast. One of the Shipyard's six dry docks (Dry Dock 6) is the largest in the Navy.

Geographically, the surrounding area is located on the north end of Kitsap Peninsula and includes several islands within the Puget Sound waterways. The City of Bremerton is located in Western Washington and is one hour west of Seattle by ferry and approximately 30 miles from Tacoma. Hood Canal forms the peninsula on the west and south, and Puget Sound on the north and east.

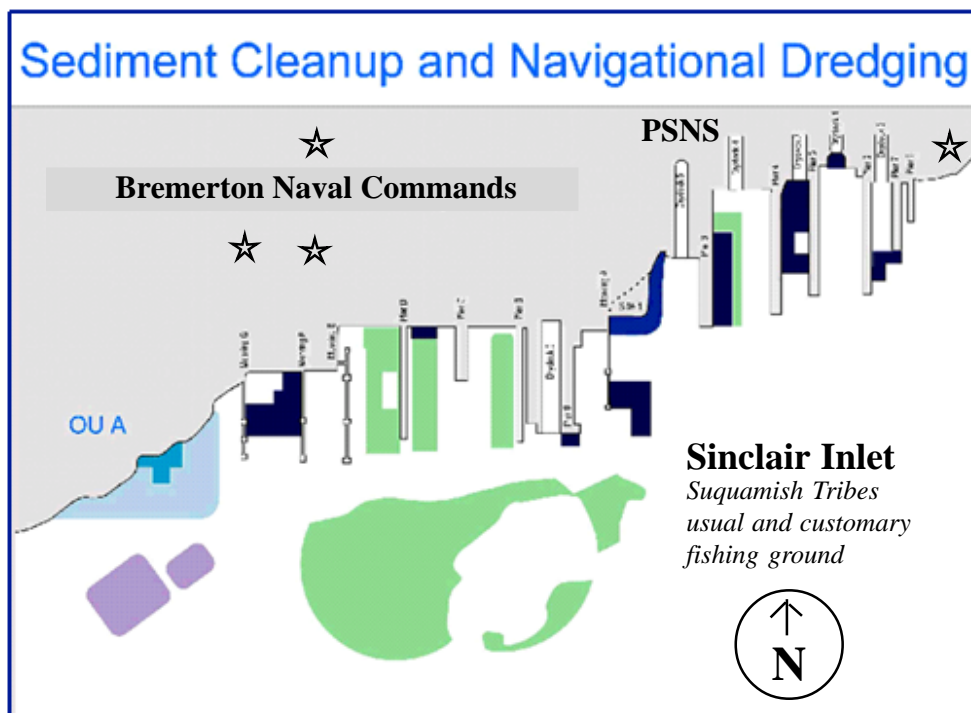
The Suquamish Tribe operates fish rearing ponds in Gorst Creek, which flows directly into Sinclair Inlet. The water adjacent to the Shipyard is part of the Tribe's usual and customary fishing grounds. There are also several known historic Native American sites in the area. Sinclair Inlet has also been defined as critical habitat for the Chinook salmon, which were recently listed as a threatened species under the Endangered Species Act.

During the last two years, the Shipyard was able to develop, negotiate, and initiate several major, multi-phase, marine and terrestrial environmental restoration and cleanup projects. These projects, which will be described in this award submittal, include some innovative and remarkable design elements that produced substantial savings. Even more remarkable was our ability to combine the cleanup dredging with an important aircraft carrier navigational dredging project. Given the complexity of the regulatory structure, we are proudest of our efforts to effectively work with regulators and the Tribe to combine these two projects and commence both on schedule.

By developing innovative dredged material disposal solutions and combining the cleanup dredging project with the navigational dredging project, Puget Sound Naval Shipyard saved the Navy over **\$30 million** and provided an excellent example of good government and good stewardship.










Background



By developing innovative dredged material disposal solutions and by combining the cleanup dredging project with the navigational dredging project, the U. S. Navy saved \$30 million and provided an excellent example of good government and good stewardship.

In May 1994, the EPA placed the Shipyard site on the National Priorities List (NPL). The list was established to categorize, rank, and speed up the investigation and cleanup of the nation's primary hazardous waste sites. The Shipyard has been an industrial facility for over 100 years. Old maps of the area show stages of gradual filling of tidelands to create a flat waterfront work area. The fill material is known to include soils removed from nearby areas, construction debris, and various wastes from Shipyard activities. Past practices, discontinued years ago, included wastewater and ship discharges directly into Sinclair Inlet, which was one source of PCBs and other contaminants in the marine sediments.

Extensive marine sediment studies were conducted in 1994 and 1995. These studies discovered that chemicals impacted the nearshore marine sediments. Chemical concentrations were above the State of Washington Sediment Quality Standards in surface sediments, with greatest

-  Minimum 2 ft of sediment to be dredged
-  Selective dredging and slope stabilization
-  Capping
-  Thin Layer Capping (enhanced natural recovery)
-  Sediment disposal pit and clean sediment storage
-  Navigation dredging area
-  Area of highest archeological potential

“We engaged and listened to our community”



Shipyard Installation Restoration Program Manager (Second from left) with State and Federal Regulators and EFA personnel

In 1998, PSNS separated into two commands, Naval Station Bremerton and the Shipyard. The Naval Station property is used as a homeport and base support for four Navy ships and crews and two Department of Transportation Maritime Administration vessels.

The Shipyard's Environmental Division maintained the lead on the cleanup projects, which encompass both commands. Throughout this process, the Shipyard relied on their Installation Restoration Program Manager to coordinates closely with Naval Station Bremerton and Engineering Field Activity Northwest to see the projects to their successful

conclusion. The program manager also works with numerous regulators and representatives of the Suquamish Tribe. He also worked with members of the community through the formation of a Restoration Advisory Board and by conducting a series of public meetings to inform the community of the cleanup options and to solicit their input. The Shipyard's Environmental Division consists of a division manager with four supervisors who oversee about forty environmental protection specialists and environmental engineers. The division manager reports to the Director of the Environment, Safety, and Health Department, who reports directly to the Shipyard Commander. A command environmental attorney assists the environmental staff. Program managers are the

division manager media specific technical experts who are charged with the primary responsibilities for specific environmental programs (e.g., Hazardous Waste, Pollution Prevention, Installation Restoration).

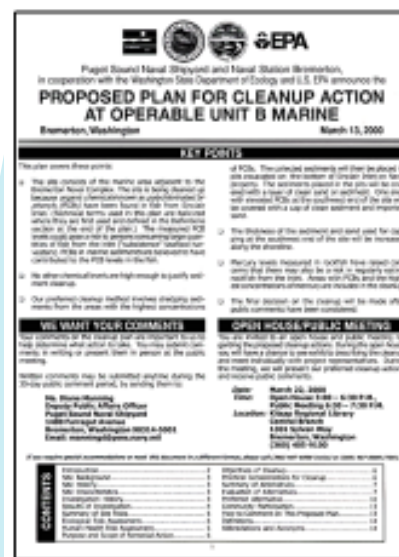
To support the role of the Bremerton Naval Commands as a homeport for aircraft carriers, the Navy planned and programmed a large navigational dredging project for the Summer of 2000 and a pier demolition and reconstruction for 2001 through 2003. The Shipyard's biggest challenge was to reach an Early Action Record of Decision (ROD) that would allow the 200,000 cubic yard marine sediment cleanup project to combine with the planned 400,000 cubic yard navigational dredging project. This was difficult to do for several reasons. The remedial investigation and feasibility studies were not complete, so the regulators and other involved parties had to be convinced that the early action ROD was in the best interest of the public and good for the environment. They also had to be convinced in time to support the combined project since the navigational dredging project was already funded and scheduled. If an agreement on the cleanup project could not be reached and an early action ROD issued, the remediation aspect of the project would have to be postponed until the navigational dredging and pier construction projects were completed in 2003.

Due to the short time frame, perseverance, technical expertise, and legal experience were essential to navigate around all the roadblocks. By combining these two projects into a single, larger dredging project, more scheduling conflicts for critical pier space had to be resolved. In the nearshore area, which is the primary focus of the cleanup, moored vessels blocked access to large areas. The cost to move these vessels can be substantial. Careful planning was essential to ensure that most of the cleanup budget was used for the actual cleanup, rather than for temporary vessel relocation. While the project was being developed, Chinook salmon

and Bull trout were listed as threatened under the Endangered Species Act. Biological assessments and additional regulatory and tribal buy-in were required when the new law was enacted.

And finally, sediment disposal posed several problems in terms of volume and cost. The cost estimate for dredging and upland disposal for the combined project was \$44,000,000. This traditional disposal method seemed cost prohibitive. Without an innovative approach to disposal of the contaminated sediments this cost would have had to been borne by the Navy.

To support this project, a draft remedial investigation was published in March 1999; a proposed plan for cleanup action was issued for public comment on 13 March 2000; and an Early Action Record Of Decision was signed on 13 June 2000. The detailed design was completed while the Proposed Plan and Record of Decision were being negotiated. Construction started on 16 June 2000, the date that had been planned over two years earlier. These milestones were completed in months, not years as would normally be required for a project of this scale.



The proposed plan for cleanup actions and final Early Action Record of Decision were complete in a fraction of the time normally required.

Program Summary

The initial Shipyard objectives paralleled those of most other cleanup projects, which include overall protection of human health and the environment while maintaining regulatory compliance. When the Shipyard realized that increased environmental protection and substantial cost savings could be obtained by combining the cleanup project with the military construction (MILCON) project, our primary objective became clear: Combine the two projects into one; which we did! Other objectives for the cleanup project included: short-term effectiveness, long-term effectiveness, performance, implementability, cost effectiveness, and community and stakeholder acceptance.



Navy personnel at proposed plan public meeting

... and our good working relationship with all the stakeholders provided a shining example of government at its best.

Puget Sound Naval Shipyard supported and continues to support an active program of interaction with the community. A Restoration Advisory Board (RAB) was formed in early 1995 to be a forum for communication between the community, regulatory agencies, and the Navy. The RAB was formed with about 20 members. The meetings are open to the public and the meeting dates are advertised in the local newspapers. Meeting minutes are placed in the local libraries. The RAB continues to meet on an as-needed basis.

Through a series of workshops, which included representatives of state and federal agencies, local government, the Suquamish Tribe, and public citizens, acceptance criteria were developed for three critical aspects of the cleanup program. These were (1) Protection of Habitat and Ecosystems, (2) Protection of Natural and Cultural Resources, and (3) Protection of Land Uses.

All three critical aspects have multiple sub-criteria. For example, there are fourteen acceptance criteria for Protection of Habitat and Ecosystems which include: Avoidance of impacts on shellfish health; Avoidance of impacts during the migration seasons; Biomagnification effects on the health of biota. There are eight acceptance criteria listed for Protection of Natural and Cultural Resources including "Preservation and enhancement of the ability of the tribe to exercise treaty fishing rights" and "Contribution toward protecting fisheries to allow safe human consumption."

These examples indicate the complexity of the acceptance criteria for this project and the efforts made by the Shipyard to ensure stakeholder and community acceptance of this project. The final and approved cleanup project met all our objectives.

COMMUNITY UPDATE

No. 15, September 2000

Puget Sound Naval Shipyard • Naval Station Bremerton • Jackson Park Housing Complex • Naval Hospital Bremerton

Marine Operations Unit B Sinclear Inlet Sediments

Current cleanup activities are well underway. The 111,000 cubic yard sediment cleanup project is a Combined Aquatic Dredging (CAD) project. The 111,000 cubic yard sediment cleanup project is a Combined Aquatic Dredging (CAD) project. The 111,000 cubic yard sediment cleanup project is a Combined Aquatic Dredging (CAD) project.

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Accomplishments

Puget Sound Naval Shipyard employees and our team members from Naval Station Bremerton and Engineering Field Activity Northwest are extremely proud of our ability to combine the cleanup dredging project with the MILCON dredging project. We also developed and executed an innovative dredged material disposal plan that saved the Navy over \$30 million. These two accomplishments, along with other unique aspects of this project and our good working relationship with all the stakeholders, provide a shining example of government at its best.

The Shipyard was able to integrate the planned MILCON dredging project with the CERCLA cleanup project. Although Shipyard's Installation Restoration Program is routinely well coordinated with the construction projects, this is the largest combined project we have completed.



By developing innovative dredged material disposal solutions and by combining the cleanup dredging project with the navigational dredging project, Puget Sound Naval Shipyard saved the Navy over \$30 million and provided an excellent example of good government.



The Proposed Plan for Cleanup Action (issued 13 March 2000) and final Early Action Record of Decision (signed 13 June 2000) were completed in a fraction of the time normally required. This was possible because we demonstrated clear environmental and economic advantages from combining the cleanup project with the navigational dredging project. The duration of disruptive activities in the marine environment was reduced and overall dredging and sediment disposal costs were significantly less. If the projects were not accomplished at the same time, the cleanup would have been delayed until after 2003 because moored vessels and Naval activity on the waterfront would have restricted access to much of the contaminated sediment.

For the cleanup and navigational projects, the estimated cost to dispose of the chemically contaminated sediment in the traditional method (an upland landfill) was \$44,000,000. The Shipyard's

Installation Restoration Program Manager proposed placing the contaminated sediment in a Confined Aquatic Disposal (CAD) pit on Navy property in a geologically stable, protected area of Sinclair Inlet, not subject to erosion from natural forces or Navy ships' propellers. Up to this point Pit CADs had never been used in Puget Sound. However, the Shipyard was able to obtain regulatory, tribal, and community approval once all the benefits were explained. The traditional method of removing the contaminated sediment to an upland landfill



would have involved considerable added impacts that included complexity and cost of additional treatment, handling, and transportation of the sediments. That alternative also would have involved considerable risk to work crews responsible for sediment handling and transport as well as causing a significant disruption to the surrounding community.

Clean Sediment excavated from the pit CAD was reused in several ways to enhance the marine habitat. Some of the material was reused to provide a one to two foot cap of clean material over an area that would not have otherwise received this material because the chemical levels in the soil were below the action limits for dredging. This clean cap will enhance the natural recovery along the existing shoreline. The clean sediment material was also used to create shallow water, near-shore habitat along an area of Navy property, thus restoring parts of the Sinclair Inlet ecosystem lost when the area was filled years earlier. Additional clean sediment from the CAD has been stockpiled adjacent to the CAD and will be reused to provide a one-foot finishing layer over the site.

The as-built pit CAD is thirty-six feet deep and 400 feet by 415 feet at the bottom with the sides of the pit sloped outward. It is 377,000 cubic yards in capacity and covers about 10 acres at the top. The cost of the completed, combined CERCLA/navigational dredging project is

estimated at \$14,000,000. This includes all the costs related to the pit excavation, additional site capping, creation of near-shore habitat, placement of contaminated sediments from both the navigational dredging and cleanup projects, final pit CAD capping, and dredging and disposal of clean sediments from the navigational program. This means the combined project will be completed for \$30,000,000 less than the traditional disposal method proposed **and** provides additional environmental benefits.

The cleanup project was also the first ever accomplished coincidental with the Endangered Species Act listing of Chinook salmon. This required the development of a biological assessment and project endorsement from the National Marine Fisheries Service and U. S. Fish and Wildlife Service, and support from other organizations such as the Suquamish Tribe.

A significant part of the project was to efficiently coordinate the dredging operation with the ships' operational/berthing schedules. Most of the dredging was accomplished while the pier berths were vacant. This required extensive planning and coordination with the Shipyard's production department; Naval Station Bremerton's homeport office; Department of Transportation; and Naval Inactive Ships Maintenance Facility (NISMF).

The Shipyard used advanced technologies to complete the project. Pre- and post dredge bathymetry was collected using side-scan sonar to determine the depth and quantity of the dredging.

Other Initiatives

Under an aggressive program to complete all cleanup work at the Shipyard, contaminated sites are capped with pavement or clean soil. At this site broken concrete slabs were removed, crushed to gravel size pieces and 786 tons were reused as base for subsequent repaving. An abandoned rail line was removed and about 400 feet of rail ties were reused to provide a boarder between the landscaping and a gravel path. The steel rails were recycled.



The barge-mounted crane was equipped with an environmental bucket for dredging. This produced less turbidity and, therefore, less short-term impact on the marine environment. Global Positioning System (GPS) equipment was used to provide accurate positioning of the dredge bucket.

The dredge material was placed on bottom dumping barges and any debris was removed during loading. Placement of the sediment was again controlled by GPS equipment.

Finally, this cleanup project would never have been allowed to proceed if the Shipyard and the Navy had not taken actions to ensure Sinclair Inlet sediments would not become recontaminated.

To complete this project the Navy will regularly collect and analyze samples of marine sediments and marine tissues to monitor changes in chemical concentrations resulting from cleanup and natural recovery process. It is expected that these changes will lead to a gradual reduction of chemical levels in the tissues of marine animals living in the inlet and thus also reduce potential human health risk from eating seafood from the inlet.



In competition with all industry (not just government), the Shipyard was awarded 2nd place in the prestigious William M. Benkert Marine Environmental Protection Award (in June of 2000). This award, presented annually by the United States Coast Guard, recognizes premier marine facility operations for large businesses.

By developing and implementing a sound Environmental Management System, the Shipyard has become a proven environmental leader and reflects great credit upon the Department of the Navy and Department of Defense.



Continuous sampling is performed to ensure water quality during the cleanup process.



Puget Sound Naval Shipyard is extremely proud of its accomplishments. We combined the MILCON dredging project with the cleanup dredging and developed innovative disposal solutions. We engaged and listened to our community, to other Navy commands, and to other stakeholders. The Shipyard demonstrated a commitment to upland pollution control and developed an effective environmental management system to ensure continued success. The final product was faster and safer for the project workers and the public, and created shallow water habitat that helps restore the historically healthy ecosystem of Sinclair Inlet. In the end, the Shipyard saved the Navy over thirty million dollars and improved 130 acres of the marine environment. We have justification to be proud representatives of the U. S. Navy.

